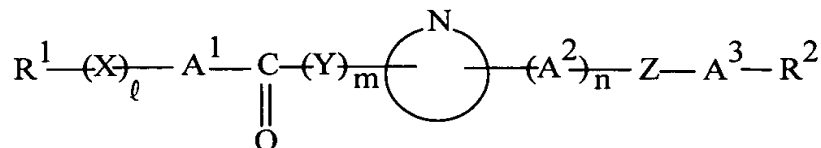


AMENDMENTS TO THE CLAIMS

1. (Previously Presented) A compound of the formula:



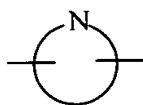
wherein R^1 is a substituted or unsubstituted N-containing cycloalkyl,

R^2 is carboxy or protected carboxy,

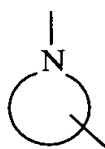
A^1 is a substituted or unsubstituted lower alkylene, a substituted or unsubstituted lower alkanyl-ylidene or a substituted or unsubstituted lower alkenylene,

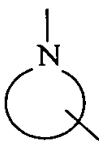
A^2 is lower alkylene,

A^3 is a substituted or unsubstituted lower alkylene,



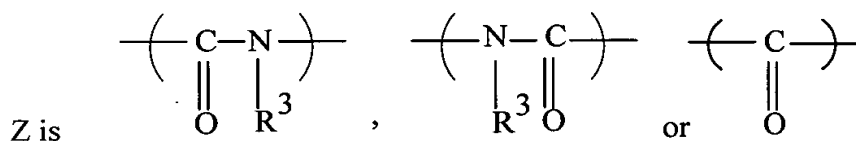
is a group of the formula:



wherein  is a substituted or unsubstituted N-containing heterocyclic group,

X is O, S or NH,

Y is NH,



wherein R³ is hydrogen or lower alkyl,

ℓ, m and n are each the same or a different integer of 0 or 1,

and a pharmaceutically acceptable salt thereof.

2. (Previously Presented) The compound of claim 1,

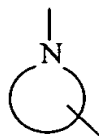
wherein R¹ is a substituted or unsubstituted 3 to 8 membered cycloalkyl containing 1 to 3 nitrogen atom(s),

R² is a carboxy or an esterified carboxy,

A¹ is a substituted or unsubstituted lower alkylene, a substituted or unsubstituted lower alkanyl-ylidene or a substituted or unsubstituted lower alkenylene,

A² is lower alkylene,

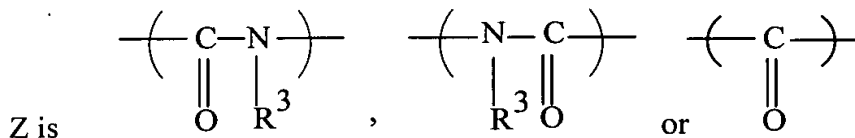
A³ is a substituted or unsubstituted lower alkylene,



is a substituted or unsubstituted saturated 3 to 8 membered heteromonocyclic group containing 1 to 4 nitrogen atom(s), a substituted or unsubstituted unsaturated condensed heterocyclic group containing 1 to 4 nitrogen atom(s) or a substituted or unsubstituted saturated 3 to 8-membered heteromonocyclic group containing 1 to 5 carbon atom(s), 1 to 2 oxygen atom(s) and 1 to 3 nitrogen atom(s),

X is O, S, or NH,

Y is NH,



wherein R³ is hydrogen or lower alkyl;

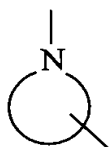
ℓ is an integer of 0 or 1,

m is an integer of 0 or 1,

n is an integer of 0 or 1.

3. (Previously Presented) The compound of claim 2,

wherein R¹ is an unsubstituted piperidyl or a substituted piperidyl containing 1 or 2
 oxo or [5- (lower) alkyl-2-oxo-1,3-dioxol-4-yl](lower)alkyl,



is piperidyl, morpholinyl, tetrahydroquinolyl or pyrrolidinyl,

A³ is an unsubstituted lower alkylene or a substituted lower alkylene containing 1 to 3
 suitable substituent(s) selected from the group consisting of (C₁-C₆)alkyl; (C₂-C₆)alkenyl;
 (C₂-C₆)alkynyl; phenyl; phenyl(C₁-C₆)alkyl; phenyl(C₁-C₆)alkyl having 1 to 4 (C₁-C₆)alkoxy,
 halo (C₁-C₆) alkyl or (C₁-C₆)alkylene dioxy; (C₁-C₆)alkyl having unsaturated condensed
 heterocyclic group containing 1 to 4 nitrogen atom(s); cyano; amino; protected amino; and
 phenyl(C₁-C₆)alkylcarbamoyl;

R², R³, A¹, A², X, Y or Z are each as defined in claim 2,

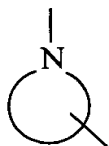
ℓ is an integer of 0,

m is an integer of 0,

n is an integer of 0.

4. (Previously Presented) The compound of claim 3,

wherein R¹ is an unsubstituted piperidyl or a substituted piperidyl containing 1 or 2
oxo or [5-(lower)alkyl-2-oxo-1,3-dioxol-4-yl](lower)alkyl,



is piperidyl, morpholinyl, tetrahydroquinolyl or pyrrolydiny,

A³ is an unsubstituted lower alkylene or a substituted lower alkylene containing 1 to 3
suitable substituent(s) selected from the group consisting of (C₁-C₆)alkyl; (C₂-C₆)alkenyl;
(C₂-C₆)alkynyl; phenyl; phenyl(C₁-C₆)alkyl; phenyl(C₁-C₆)alkyl having 1 to 4 (C₁-C₆)alkoxy,
halo(C₁-C₆)alkyl or (C₁-C₆)alkylene dioxy; (C₁-C₆)alkyl having unsaturated condensed
heterocyclic group containing 1 to 4 nitrogen atom(s); cyano; amino; (C₁-C₆)alkanoylamino;
aroylamino which may have 1 to 3 hydroxy, (C₁-C₆)alkoxy, halogen or phenyl; cyclo(C₃-
C₆)alkylcarbonylamino; (C₁-C₆)alkoxy(C₁-C₆)alkylcarbonylamino; (C₂-C₆)carbonylamino;
(C₁-C₆)alkylsulfonylamino; phenylsulfonylamino; and phenyl(C₁-C₆)alkylcarbonyl;

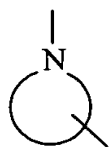
R², R³, A¹, A², X, Y or Z are each as defined in claim 3,

ℓ is an integer of 0,

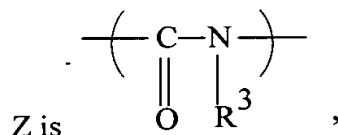
m is an integer of 0,

n is an integer of 0.

5. (Previously Presented) The compound of claim 4,
wherein R^1 is piperidyl,
 A^1 is a lower alkylene or a lower alkanyl-ylidene,
 A^3 is an unsubstituted lower alkylene or a substituted lower alkylene containing a lower alkyl,
a lower alkynyl or a lower alkanoylamino,

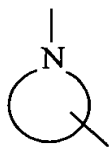


is piperidyl,



R^2 , R^3 , A^2 , Y, ℓ , m, and n are each as defined in claim 4.

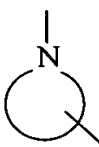
6. (Previously Presented) The compound of claim 5,
wherein R^3 is hydrogen,
 A^1 is a lower alkylene,
 A^3 is a lower alkylene having a lower alkanoylamino,



R^1 , A^2 , , X, Y and Z are each as defined in claim 5.

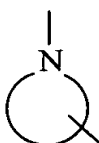
7. (Original) N-[(R)-1-{3-(4-piperidyl)propionyl}-3-piperidylcarbonyl]-2(S)-acetylamino- β -alanine or its hydrochloride.

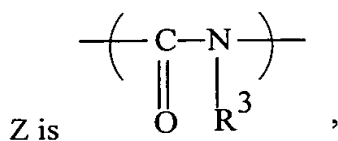
8. (Previously Presented) The compound of claim 5,
wherein R^3 is hydrogen,
 A^1 is a lower alkylene,
 A^3 is a lower alkylene having a lower alkynyl,

$R^1, R^2, A^2,$ , X, Y, Z, ℓ , m and n are each as defined in claim 5.

9. (Original) N-[(R)-1-{3-(4-piperidyl)propionyl}-3-piperidylcarbonyl]-3(S)-ethynyl- β -alanine.

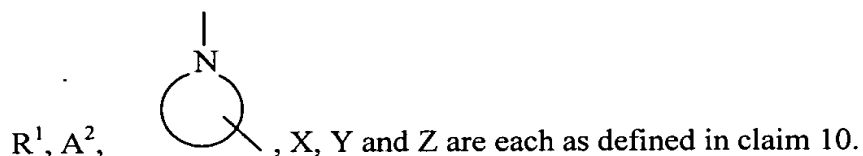
10. (Previously Presented) The compound of claim 4,
wherein R^1 is piperidyl,
 A^1 is a lower alkylene or a lower alkanylylidene,
 A^3 is an unsubstituted lower alkylene or a substituted lower alkylene containing a lower alkyl,
a lower alkynyl or a lower alkanoylamino,

 is morpholinyl,



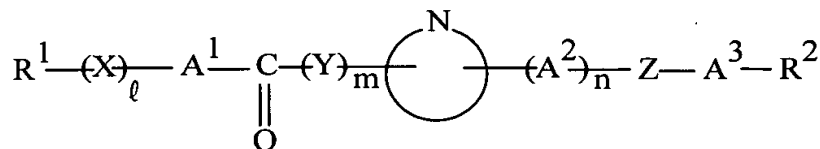
R^2 , R^3 , A^2 , Y, ℓ , m and n are each as defined in claim 4.

11. (Original): A compound of claim 5,
 wherein R^3 is hydrogen,
 A^1 is lower alkylene,
 A^3 is lower alkylene,



12. (Original) N-[4-{3-(4-piperidyl)propionyl}-2-morpholinylcarbonyl]- β -alanine or its hydrochloride.

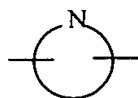
13. (Currently Amended) A process for preparing a compound of the formula:



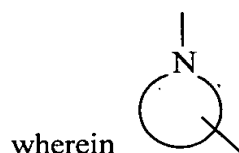
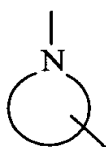
wherein R^1 is a substituted or unsubstituted N-containing cycloalkyl,
 R^2 is a carboxy or a protected carboxy,
 A^1 is a substituted or unsubstituted lower alkylene, a substituted or unsubstituted lower alkanyl-ylidene or a substituted or unsubstituted lower alkenylene,

A² is a lower alkylene,

A³ is a substituted or unsubstituted lower alkylene,



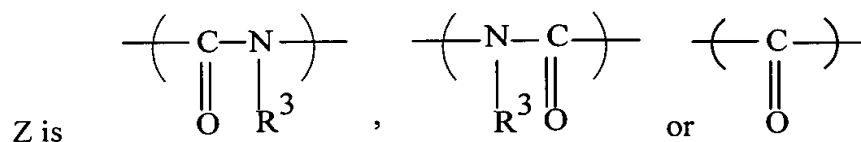
is a group of the formula:



wherein is a substituted or unsubstituted N-containing heterocyclic group,

X is O, S or NH,

Y is, NH,

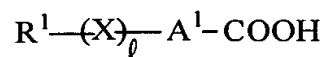


(wherein R³ is hydrogen or lower alkyl),

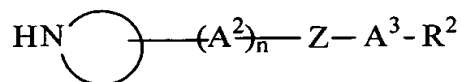
ℓ, m and n are each the same or a different integer of 0 or 1,

and a salt thereof, which comprises

(i) reacting a compound of the formula

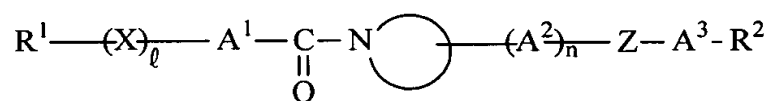


wherein R¹, A¹, X and ℓ are each as defined above, or its reactive derivative at the ~~carboxy~~
carboxy group or a salt thereof, with a compound of the formula:



wherein R^2 , A^2 , A^3 , $\text{HN} \bigcirc$, Z and n are each as defined above,

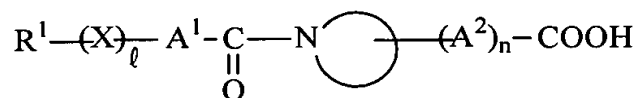
or its reactive derivative at the amino group or a salt thereof, to give a compound of the formula:



wherein R^1 , R^2 , A^1 , A^2 , A^3 , $\text{---} \text{N} \bigcirc \text{---}$, X , Z , ℓ and n are each as defined above,

or a salt thereof, or

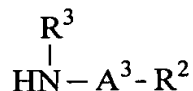
(ii) reacting a compound of the formula:



wherein R^1 , A^1 , A^2 , $\text{---} \text{N} \bigcirc \text{---}$, X , ℓ and n are each as defined above,

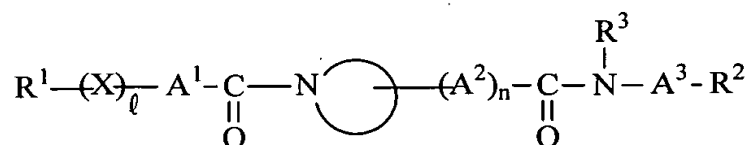
or its reactive derivative at the carboxy group

or a salt thereof, with a compound of the formula:

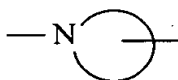


wherein R^2 , R^3 and A^3 are each as defined above, or its reactive derivative at the amino group

or a salt thereof, to give a compound of the formula:



wherein R^1 , R^2 , R^3 , A^1 , A^2 , A^3 ,

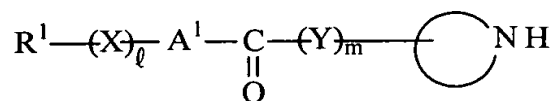


, X , ℓ and n are each as defined

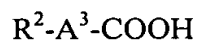
above,

or a salt thereof, or

(iii) reacting a compound of the formula:

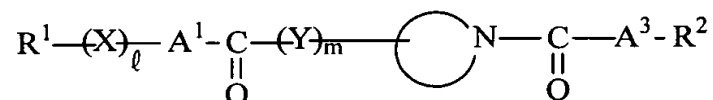


wherein R^1 , A^1 , $\text{HN} \bigcirc$, X , Y , ℓ and m are each as defined above, or its reactive derivative at the amino group or a salt thereof, with a compound of the formula



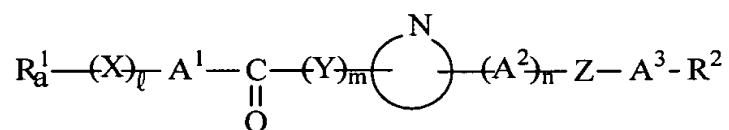
wherein R^2 and A^3 are each as defined above,

or its reactive derivative at the carboxy group or a salt thereof, to give a compound of the formula:

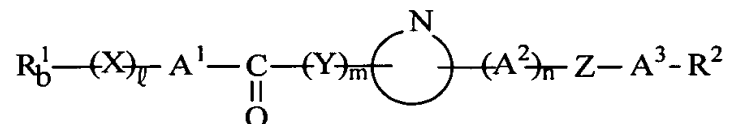


wherein R^1 , R^2 , A^1 , A^3 , ---N--- , X, Y, Q and m are each as defined above,
 or a salt thereof, or

(iv) subjecting a compound of the formula:

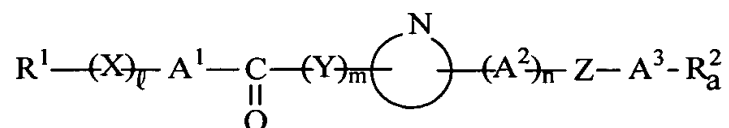


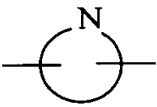
wherein R^2 , A^1 , A^2 , A^3 , ---N--- , X, Y, Z, ℓ , m and n are each as defined above, and
 R_a^1 is a substituted or unsubstituted N-containing cycloalkyl having amino protective group,
 or a salt thereof, to elimination reaction of the amino protective group, to give a compound of the formula:

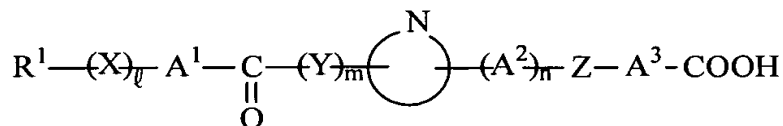


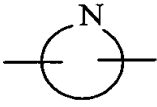
wherein R^2 , A^1 , A^2 , A^3 , ---N--- , X, Y, Z, ℓ , m and n are each as defined above, and
 R_b^1 is a substituted or unsubstituted N-containing cycloalkyl,
 or a salt thereof, or

(v) subjecting a compound of the formula:

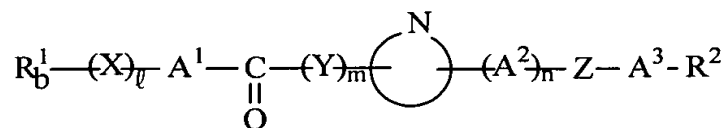


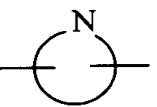
wherein R^1 , A^1 , A^2 , A^3 , , X , Y , Z , ℓ , m and n are each as defined above, and R_a^2 is protected carboxy, or a salt thereof, to elimination reaction of carboxy protective group, to give a compound of the formula:

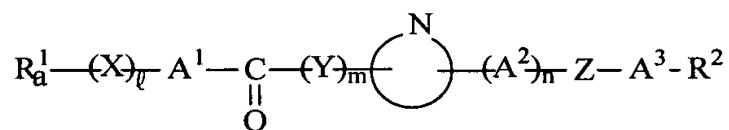


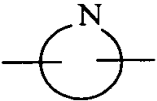
wherein R^1 , A^1 , A^2 , A^3 , , X , Y , Z , ℓ , m and n are each as defined above, or a salt thereof, or

(vi) subjecting a compound of the formula:

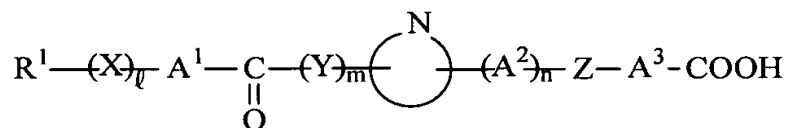


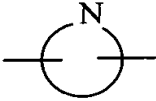
wherein R^2 , A^1 , A^2 , A^3 , , X , Y , Z , ℓ , m and n are each as defined above, and R_b^1 is a substituted or unsubstituted N-containing cycloalkyl, or a salt thereof, to protecting reaction of amino, to give a compound of the formula:

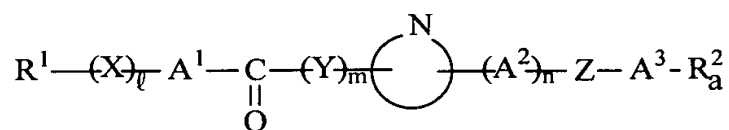


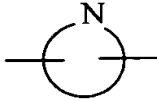
wherein R^2 , A^1 , A^2 , A^3 , , X , Y , Z , ℓ , m and n are each as defined above, and R_a^1 is a substituted or unsubstituted N-containing cycloalkyl having amino protecting group, or a salt thereof, or

(vii) subjecting a compound of the formula:

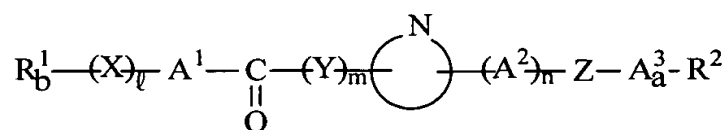


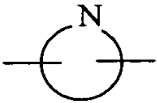
wherein R^1 , A^1 , A^2 , A^3 , , X , Y , Z , ℓ , m and n are each as defined above, or its reactive derivative at the carboxy group or a salt thereof, to protecting reaction of the carboxy, to give a compound of the formula:

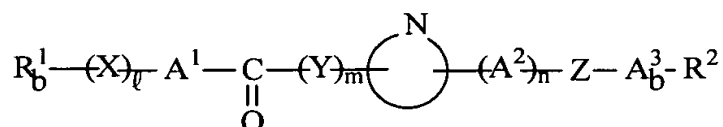


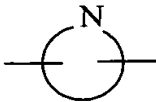
wherein R^1 , A^1 , A^2 , A^3 , , X , Y , Z , ℓ , m and n are each as defined above, and R_a^2 is a protected carboxy, or a salt thereof, or

(viii) subjecting a compound of the formula:

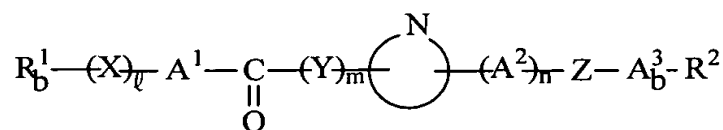


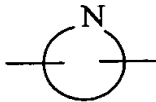
wherein R_b^1 , R^2 , A^1 , A^2 , , X , Y , Z , ℓ , m and n are each as defined above, and A_a^3 is lower alkylene having protected amino or a salt thereof, to elimination reaction of amino protective group, to give a compound of the formula:

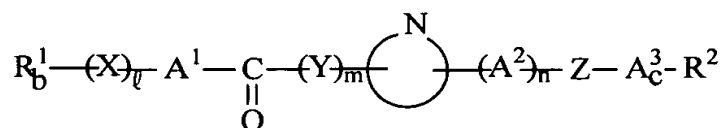


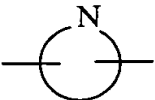
wherein R_b^1 , R^2 , A^1 , A^2 , , X , Y , Z , ℓ , m and n are each as defined above, and A_b^3 is a lower alkylene having an amino or a salt thereof, or

(ix) subjecting a compound of the formula:



wherein R_b^1 , R^2 , A^1 , A^2 , , X , Y , Z , ℓ , m and n are each as defined above, and A_b^3 is lower alkylene having amino, or a salt thereof, to acylation reaction of amino, to give a compound of formula:



wherein R^1 , R^2 , A^1 , A^2 , , X , Y , Z , ℓ , m and n are each as defined above, and A^3 is lower alkylene having acylamino, or a salt thereof.

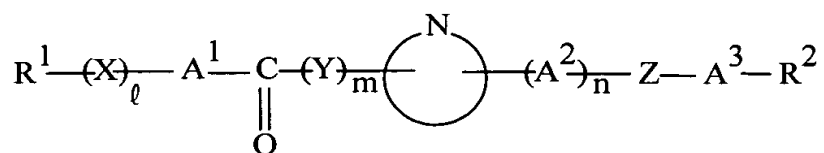
14. (Original) A pharmaceutical composition which comprises, as an active ingredient, a compound of claim 1 or a pharmaceutically acceptable salt thereof in admixture with pharmaceutically acceptable carriers or excipients.

15. (Canceled).

16. (Previously Presented) The compound of claim 1, or a pharmaceutically acceptable salt thereof, wherein said compound or pharmaceutically acceptable salt thereof is admixed with a pharmaceutically suitable carrier.

17. (Previously Presented) A method for the treatment of diseases caused by thrombus formation; restenosis or reocclusion; the thrombus formation in case of vascular surgery, valve replacement, extracorporeal circulation or transplantation; disseminated intravascular coagulation; thrombotic thrombocytopenic; essential thrombocytosis; inflammation; or for the adjuvant therapy with thrombolytic drug or anticoagulant; which comprises administering a compound of claim 1 or a pharmaceutically acceptable salt thereof to a human being or an animal.

18. (Previously Presented) A compound of the formula:



wherein:

R^1 is a 6-membered cyclo(lower)alkyl containing 1 to 3 nitrogen atoms which may have one or more amino protective groups;

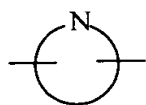
X is O, S or NH, and

ℓ is an integer of either 0 or 1;

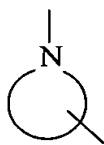
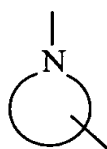
A^1 is a substituted or unsubstituted lower alkylene, a substituted or unsubstituted lower alkenylene or a substituted or unsubstituted lower alkanyl-ylidene;

Y is NH, and

m is an integer of either 0 or 1;

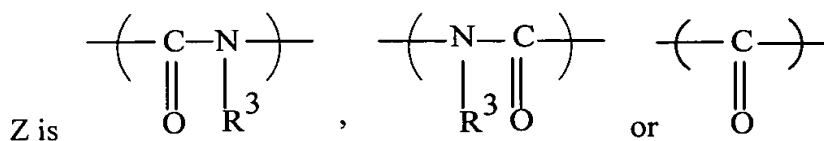


is a group of the formula:



wherein is a substituted or unsubstituted 5 or 6-membered N-containing heterocyclic group containing 1 to 3 nitrogen atoms;

A^2 is a lower alkylene, and n is an integer of either 0 or 1;



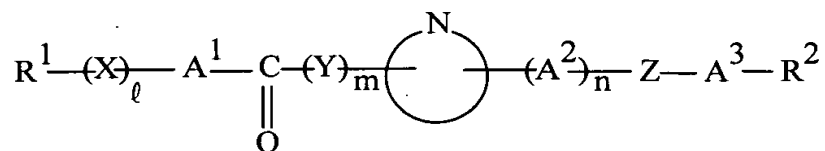
wherein R³ is hydrogen or a lower alkyl;

A³ is a substituted or unsubstituted lower alkylene;

and R² is a carboxy or a protected carboxy;

or a pharmaceutically acceptable salt thereof.

19. (Previously Presented): A compound comprising the following structure:



wherein R¹ is piperidyl, or piperidyl with one acyl;

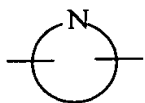
X is O, S or NH, and

ℓ is an integer of 0;

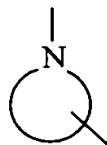
A¹ is ethylene;

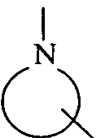
Y is NH, and

m is an integer of 0;



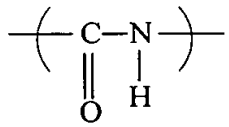
is a group of the formula:



wherein  is piperidyl;

A² is a lower alkylene, and

n is an integer of 0;

Z is ,

wherein R³ is hydrogen or a lower alkyl;

A³ is ethylene, trimethylene or tetramethylene, each of which has one substituent selected from the group consisting of aryl, aryl(lower)alkyl and a heterocyclic group; and

and R² is a carboxy or a protected carboxy;

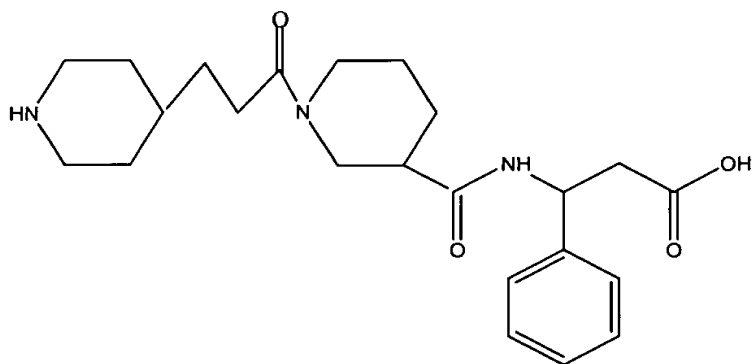
or a pharmaceutically acceptable salt thereof.

20. (Previously Presented): The compound of Claim 19, wherein

R¹ is 4-piperidyl; and

A³ is ethylene, trimethylene or tetramethylene, each of which has one substituent selected from the group consisting of phenyl, pyridyl, and quinolyl.

21. (Previously Presented) The compound of Claim 20, which is N-[(R)-1-{3-(4-piperidyl)propionyl}-3-piperidyl-carbonyl]-3-phenyl-β-alanine or its acid addition salt of a compound of the formula:



or its acid addition salt.

22. (Previously Presented) A method of producing a medicament, comprising mixing the compound of claim 1 or a pharmaceutically acceptable salt thereof with a pharmaceutically suitable carrier.

23. (Previously Presented) A method for the treatment of a disease caused by thrombus formation comprising administering to a patient in need thereof an effective amount of the compound of claim 1 or a pharmaceutically acceptable salt thereof .

24. (Previously Presented) The method of claim 23, wherein said disease caused by thrombus formation is restenosis or reocclusion; the thrombus formation in case of vascular surgery, valve replacement, extracorporeal circulation or transplantation; disseminated intravascular coagulation; thrombotic thrombocytopenic; essential thrombocytosis; or inflammation.

25. (Previously Presented) The compound of claim 16, wherein said compound is N-[(R)-1-{3-(4-piperidyl)propionyl}-3-piperidylcarbonyl]-β-alanine hydrochloride.

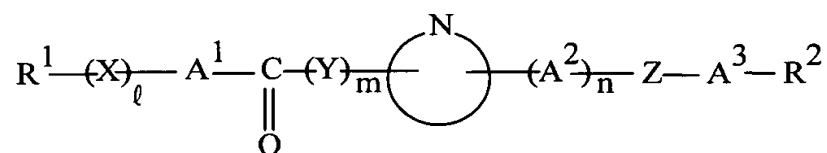
26. (Previously Presented) The method of claim 17, wherein said compound is N-[(R)-1-{3-(4-piperidyl)propionyl}-3-piperidylcarbonyl]-β-alanine hydrochloride.

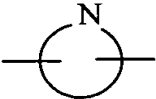
27. (Previously Presented) The method of claim 22, wherein said compound is N-[(R)-1-{3-(4-piperidyl)propionyl}-3-piperidylcarbonyl]-β-alanine hydrochloride.

28. (Previously Presented) The method of claim 23, wherein said compound is N-[(R)-1-{3-(4-piperidyl)propionyl}-3-piperidylcarbonyl]-β-alanine hydrochloride.

29. (Previously Presented) N-[(R)-1-{3-(4-piperidyl)propionyl}-3-piperidylcarbonyl]-β-alanine or its hydrochloride.

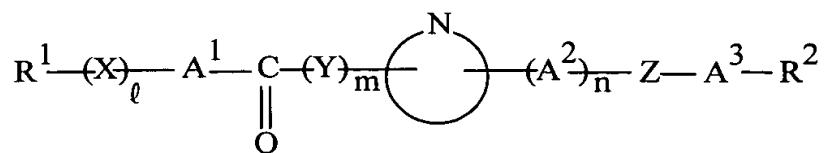
30. (Previously Presented) The process of claim 13 for preparing a compound of the formula:

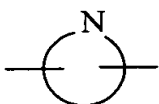


wherein R^1 , R^2 , A^1 , A^2 , A^3 , , X , Y , Z , ℓ , m and n are as defined in claim 13,

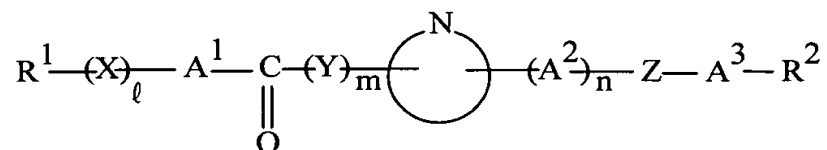
wherein said process comprises the process defined in section (i) of claim 13.

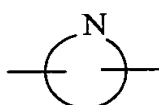
31. (Previously Presented) The process of claim 13 for preparing a compound of the formula:



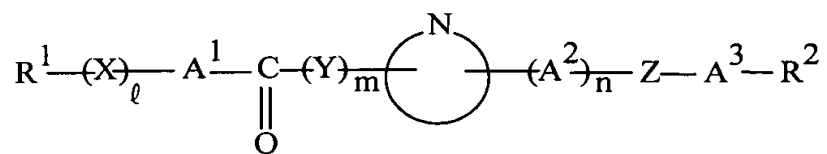
wherein R^1 , R^2 , A^1 , A^2 , A^3 , , X , Y , Z , ℓ , m and n are as defined in claim 13,
 wherein said process comprises the process defined in section (ii) of claim 13.

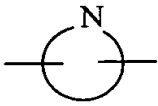
32. (Previously Presented) The process of claim 13 for preparing a compound of the formula:



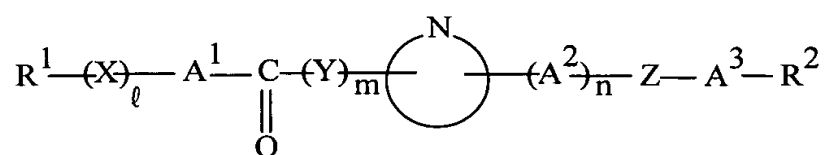
wherein R^1 , R^2 , A^1 , A^2 , A^3 , , X , Y , Z , ℓ , m and n are as defined in claim 13,
 wherein said process comprises the process defined in section (iii) of claim 13.

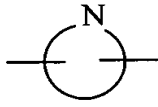
33. (Previously Presented) The process of claim 13 for preparing a compound of the formula:



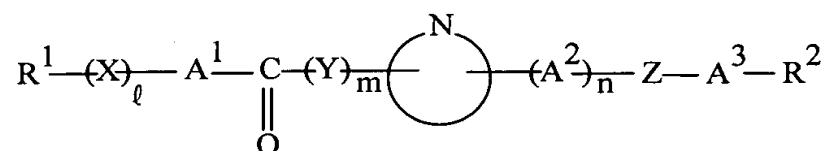
wherein R^1 , R^2 , A^1 , A^2 , A^3 , , X , Y , Z , ℓ , m and n are as defined in claim 13,
 wherein said process comprises the process defined in section (iv) of claim 13.

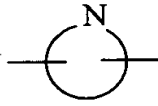
34. (Previously Presented) The process of claim 13 for preparing a compound of the formula:



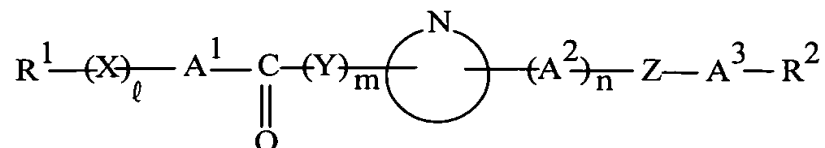
wherein R^1 , R^2 , A^1 , A^2 , A^3 , , X , Y , Z , ℓ , m and n are as defined in claim 13,
 wherein said process comprises the process defined in section (v) of claim 13.

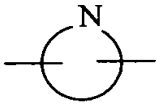
35. (Previously Presented) The process of claim 13 for preparing a compound of the formula:



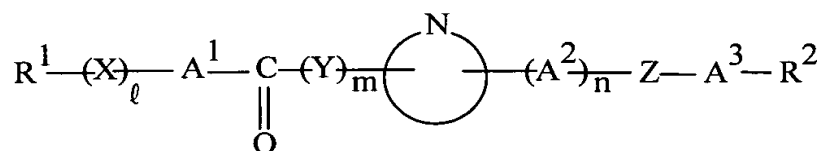
wherein R^1 , R^2 , A^1 , A^2 , A^3 , , X , Y , Z , ℓ , m and n are as defined in claim 13,
 wherein said process comprises the process defined in section (vi) of claim 13.

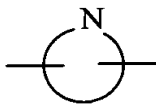
36. (Previously Presented) The process of claim 13 for preparing a compound of the formula:



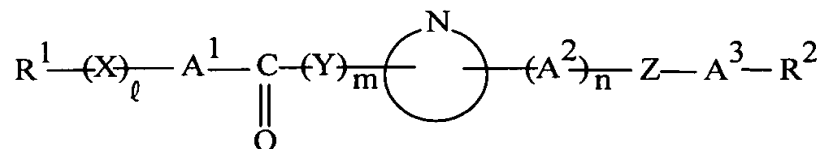
wherein R^1 , R^2 , A^1 , A^2 , A^3 , , X , Y , Z , ℓ , m and n are as defined in claim 13, wherein said process comprises the process defined in section (vii) of claim 13.

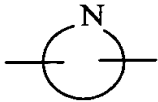
37. (Previously Presented) The process of claim 13 for preparing a compound of the formula:



wherein R^1 , R^2 , A^1 , A^2 , A^3 , , X , Y , Z , ℓ , m and n are as defined in claim 13, wherein said process comprises the process defined in section (viii) of claim 13.

38. (Previously Presented) The process of claim 13 for preparing a compound of the formula:



wherein R^1 , R^2 , A^1 , A^2 , A^3 , , X, Y, Z, ℓ , m and n are as defined in claim 13,
wherein said process comprises the process defined in section (ix) of claim 13.

39. (New) The compound of Claim 1, wherein said compound is isolated.
40. (New) The compound of Claim 1, wherein said compound is purified.
41. (New) The compound of Claim 1, wherein said compound is chemically synthesized.
42. (New) The compound of Claim 1, wherein R^1 is selected from the group consisting of azetidiny, pyrrolidinyl, piperidyl, piperazinyl, morpholinyl, and quinolinyl.
43. (New) The process of Claim 13, wherein R^1 is selected from the group consisting of azetidiny, pyrrolidinyl, piperidyl, piperazinyl, morpholinyl, and quinolinyl.
44. (New) The compound of Claim 18, wherein R^1 is selected from the group consisting of azetidiny, pyrrolidinyl, piperidyl, piperazinyl, morpholinyl, and quinolinyl.
45. (New) The compound of Claim 18, wherein said compound is isolated.
46. (New) The compound of Claim 18, wherein said compound is purified.

47. (New) The compound of Claim 18, wherein said compound is chemically synthesized.

SUPPORT FOR THE AMENDMENTS

Claim 15 was previously cancelled.

Claim 13 has been amended.

Claims 39-47 have been added.

The amendment of Claim 13 serves to correct a typographical error in which “carboxy” was improperly reproduced as “carboy.” Claims 39-47 are supported by the Examples of the present application (pages 50-165). Claims 42-44 are further supported by page 28, lines 26-31.

No new matter has been added by the present amendment.